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The Utility of Phonic Generalizations in Their Application to the Historyand Geography Vocabularies in Certain Specified Textbooks Adopted for Grades Four, Five, and Six.

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ABSTRACT

This study was conducted to determine the applicability and utility of forty-five phonic generalizations in a vocabulary developed from elementary social studies. The generalizations were those stated by Theodore Clymer (Reading Teacher, Vol. 16, January, 1963). Words utilized in this investigation numbered 2,613 and were drawn from fifty-one textbooks and teachers' manuals approved by the Louisiana State Board of Education and listed in the State-owned (Free) Textbooks, Form 2-Textbook Catalog, effective August 31, 1967. Hyphenations, abbreviations, proper nouns, and certain words of foreign derivation were omitted. The Thorndike-Barnhart High School Dictionary, 1965 edition, was used as the authority for pronunciation.

Data gathered were used in evaluating each generalization in terms of two criteria developed by Clymer:

1. Seventy-five per cent or more of the applicable words or word-parts should conform to the generalization.
2. At least twenty applications should relate to the generalization.

Percentages of utility were computed by dividing the number of conforming applications by the total applications. Percentages were computed for each of the forty-five generalizations and for certain sub-categories drawn from the larger statements. A word containing two applicable parts provided two counts.

Results were compared with the results of the Clymer study and

with the findings of succeeding inquiries made by Mildred H. Bailey (Reading Teacher, Vol. 20, February, 1967) and Robert Emans (Reading Teacher, Vol. 20, February, 1967).

Seventeen generalizations satisfied both criteria in the present study. Utilities of 100 per cent were computed for ten generalizations, but two among this number had fewer than twenty applications in the vocabulary. Among the ten which received 100 per cent utilities, only one had in excess of eighty applications in the 2,613 words.

Certain relationships became evident in the comparison. Each of eight generalizations was assigned 100 per cent utility in the present study and in those of Clymer, Bailey, and Emans. The criteria were satisfied by eighteen generalizations in Clymer's investigation and in sixteen and twenty-four in the investigations of Emans and Bailey, respectively. Only in the present study did Generalization 34 satisfy both criteria.

Evidence seemed to justify the following concluding statements:

1. Fewer than one-half of the generalizations consistently satisfied the evaluative criteria.
2. A greater number satisfied the criteria when applied by Bailey to a larger vocabulary (5,773) evolved from a greater number of grade levels (1-6).
3. The dictionary selected as the pronunciation authority may strongly influence the utility percentages of generalizations.
4. The authority used in this study allowed the computation of a 96 per cent utility for Generalization 34, but Clymer, Bailey, and Emans assigned it zero per cent, zero per cent,

and one per cent, respectively.

5. Finally, the four studies, though conducted in differing vocabularies and based on different dictionaries, indicated the dependability (100 per cent utility) of the following generalizations:

   a. The word element ch has one sound.

   b. In the word elements co and ca, the c has the k sound.

   c. In the word element ght, the gh is silent.

   d. In words beginning kn, the k is silent.

   e. In words beginning wr, the w is silent.

   f. Ck, as the last element in a word, has the sound of k.

   g. Tion, as the final syllable, is unaccented.

   h. Th, ch, and sh are in the same syllable when they follow the initial vowel in a word.

CHAPTER I

INTRODUCTION

The nature of phonics and discussions of its proper role in the process of teaching children to read have been, for many years, topics included in textbooks on reading methods, curriculum guides, student materials, and in teachers' manuals designed to guide instruction. The use of phonics as a teaching method has varied in extent at different times since it was introduced in American schools in 1782 by Noah Webster.[1] Although investigations showed that major emphasis was given to phonics in basal reader series, a disparity of practices and differences of opinion existed among teachers and administrators regarding the importance of phonics instruction.[2] A Harvard study, for example, showed that an overwhelming majority of college professors favored an eclectic approach to the teaching of reading. This approach included phonics.[3] After citing opposition to the phonics approach, George D. Spache said: "The argument is not yet closed, and phonics is still being offered by some sources as a means of completely eradicating failure in

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[1]Emerald V. Dechant, Improving the Teaching of Reading (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1964), p. 177.

[2]Gerald Taulbee Sample, "A Comparative Study of the Scope, Sequence, and Timing of the Introduction of Phonics as Practiced by Some Publishers of Reading Series" (unpublished Doctor's dissertation, The University of Oklahoma, Norman, 1966), cited in Dissertation Abstracts (Ann Arbor, Michigan: University Microfilms, Inc., Vol. 27, No. 2, August, 1966), p. 334A.

[3]Mary C. Austin and Coleman Morrison, The First R: The Harvard Report on Reading (New York: The Macmillan Company, 1963), p. 27.

reading...", but he concluded, "...there is little authoritative agreement on methods or content of phonics teaching."[4]

I. THE PROBLEM

Background of the problem. The use of phonics has been traced from its inception to the present. Dechant reported that the earliest use of the phonics method was originated by Ickelsamer in 1534 and was introduced in this country just after the American Revolution. He reported that its use was offered as an alternative to the alphabetic method in which reading instruction was initiated with the letter names. Phonics was used to relate the sounds to the letters.[5] Nila B. Smith recalled that "...Noah Webster prepared the first reading texts authored by an American citizen. In these texts, Webster introduced phonics, not as an aid in learning to read, but as a medium for unifying the American language."[6] Because Webster's first editions were greatly critized, subsequent editions were revised and the American Spelling Book was published. Smith noted that ten million pupils learned phonics while working with such materials.[7] She further stated:

> For several years, however, the phonic method was not used for the purpose of aiding children to work out the pronunciation of unrecognized words which they met in reading. It was used in realizing Webster's patriotic aim of unifying spoken language in America.

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[4]George D. Spache, Toward Better Reading (revised edition; Champaign, Illinois: Garrard Publishing Company, 1966), p. 223.

[5]Dechant, loc. cit.

[6]Nila B. Smith, Reading Instruction for Today's Children (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963), p. 188.

[7]Ibid., p. 189.

> As the years rolled by, however, patriotism and phonics parted ways. Phonics then continued under the sponsorship of pedagogy. Pedagogy gave phonics its new function --that of helping children to attain independence in attacking new words while reading. In this role phonics has continued its long trek through American classrooms from post-Revolutionary days to the present time.[8]

Smith noted that the scientific movement in the early decades of the twentieth century produced tests that served to reveal reading deficiencies. Phonics methods were blamed by many. A virtual abandonment of phonics resulted but the approach gained new impetus in the late 1930's.[9]

Dechant delineated the current status of phonics by stating:

> At present the phonics method is the most discussed synthetic method. It is now generally accepted that phonics have a prominent place in a reading program. In fact, some feel that phonics instruction may well be more beneficial than any other skill in helping the pupil to develop a sight vocabulary and to become an independent reader. However, questions as to when and how we might introduce phonics most effectively are still unanswered.[10]

John J. DeBoer and Martha Dallman mentioned the same points discussed by Dechant. They also wrote: "There seems to be more diversity of opinion as to what rules or generalizations related to phonetic analysis should be learned than there is concerning the phonic elements to be taught."[11]

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[8] Ibid.

[9] Ibid.

[10] Dechant, op. cit., p. 189.

[11] John J. DeBoer and Martha Dallman, The Teaching of Reading (revised edition; New York: Holt, Rinehart, and Winston, Inc., 1964), pp. 97-98.

Research regarding the utility of phonic generalizations became the focal point of interest to this investigator. A survey of literature disclosed that Theodore Clymer evolved statements of phonic principles from several series of basal readers and in 1963 reported their usefulness in a primary reading vocabulary.[12] His work was the first of a number of similar studies and, eventually, motivated the study presented here.

Statement of the problem. The purpose of this study was to determine the utility of each of the forty-five phonic generalizations developed by Theodore Clymer[13] when related to the vocabulary of fourth, fifth, and sixth grade history and geography textbooks adopted by the Louisiana State Board of Education.[14] The Thorndike-Barnhart High School Dictionary, Fourth Edition, was used as the authority for pronunciation.[15]

Comparisons to be considered included:

1. To determine the utility for each of the forty-five phonics generalizations, identified by Clymer,[16] in the fourth, fifth, and sixth grade geography and history vocabulary developed for this investigation.

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[12]Theodore Clymer, "The Utility of Phonic Generalizations in the Primary Grades," The Reading Teacher, 16 (January, 1963), 252-258.

[13]Ibid.

[14]Louisiana State Department of Education, State-owned (Free) Textbooks, Form 2 - Textbook Catalog (Baton Rouge, Louisiana: Materials of Instruction Section, undated), pp. 10-11.

[15]E. L. Thorndike and Clarence L. Barnhart, High School Dictionary (fourth edition; Chicago: Scott, Foresman and Company, 1965).

[16]Clymer, loc. cit.

2. To compare each of the forty-five generalizations with the 75 per cent criterion of utility used by Clymer.
3. To determine which of the forty-five generalizations related to at least twenty words in the geography and history vocabulary. This criterion was used by Clymer in his study.
4. To relate the findings of this investigation to the results reported by Clymer,[17] Mildred H. Bailey,[18] and Robert Emans.[19]

Delimitation of the problem. This study was limited to the development of percentages of utility for each of the forty-five phonic generalizations identified by Clymer[20] when applied to the history and geography vocabulary described below in procedures two through six.

Procedures used in the study. The following procedures were used in the investigation:

1. Copies of the Louisiana State Board of Education adopted textbooks in history and geography were secured for grades four, five, and six. For each textbook, the related teachers' edition and manual were secured. Only the textbook lists in use on August 1, 1967, were used. A list of the textbooks and manuals utilized in this study is presented in the Appendix.

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[17] Ibid.

[18] Mildred H. Bailey, "The Utility of Phonic Generalizations in Grades One Through Six," The Reading Teacher, 20 (February, 1967), 413-418.

[19] Robert Emans, "The Usefulness of Phonic Generalizations Above the Primary Grades," The Reading Teacher, 20 (February, 1967), 419-425.

[20] Clymer, loc. cit.

2. The investigator identified the words listed for initial introduction to the pupils. Such lists were compiled from the teachers' manuals, from lists at the conclusion of textbook chapters, and from the glossaries of terms.
3. Foreign words not defined in the dictionary used as the authority were excluded as were contractions and abbreviations.
4. Proper nouns were not retained except in instances in which these words could be used as non-proper nouns without change in pronunciation.
5. Hyphenated words were eliminated except in cases in which each of the parts could be used as a separate term without change in pronunciations. In such instances, two or more words were listed.
6. For purposes of this study, the history and geography vocabulary listings for grades four, five, and six were prepared from words that met the requirements outlined in Items 3, 4, and 5.
7. The vocabulary terms were alphabetized into a composite listing and duplications were eliminated.
8. A single list of authorized pronunciations was developed. Each word was syllabicated, accented, and phonetically respelled according to entries appearing in the Thorndike-Barnhart High School Dictionary, Fourth Edition. The first pronunciation entry was used for each word.
9. A computer card showing the word spelled, syllabicated, and accented was punched for each term.
10. A computer program was developed to isolate from the composite listing all of the words to which each of the forty-five phonic

generalizations applied.

11. Each of the forty-five listings was related word-by-word to a listing which reflected the pronunciation as determined by the phonetic respellings, the syllabication, and accent markings.
12. A count was recorded for each word that conformed to the applicable generalization. Each non-conformation was counted. In words having two or more syllables to which a phonics generalization applied, two or more counts of conformity or non-conformity were made.
13. For each generalization the total of applicable incidents was tabulated from the vocabulary. The number of conforming incidents was divided by the total applicable incidents to obtain a percentage of utility or conformity. Results are presented in Chapter IV.

Importance of the study. The utility of phonics generalizations in vocabularies studied by elementary pupils is an area which has prompted research in recent years. Clymer[21] applied the generalizations to a primary reading vocabulary and Bailey[22] extended the investigation to words listings for grades one through six. Emans tested the generalizations for utility in a sampling of words used beyond the primary grades. None of these studies tested the generalizations in a social studies vocabulary at any level.

Bailey reported that the results of her study "...did emphasize the need for supplementation of future research to establish the value

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[21]Clymer, loc. cit.

[22]Bailey, loc. cit.

of phonic generalizations in reading in the elementary grades."[23] She also recommended that research be undertaken to test the generalizations in vocabularies drawn from science, social sciences, and arithmetic.[24]

This investigation extends the research into the social studies vocabulary. This extension provides an important and heretofore unused means of testing the forty-five phonic generalizations. It continues the research begun by Clymer, provides a study closely related to that of Emans, and satisfies one of the recommendations made by Bailey.

II. DEFINITIONS OF TERMS USED

Phonics. For the purpose of this study the definition of phonics as reported by DeBoer and Dallman is "...phonics is the study of the relationship of the letters and letter combinations in words on the printed page and the sounds in the spoken words..."[25]

Phonic generalizations. The term "phonic generalizations" refers to the forty-five phonic generalizations developed by Clymer.[26]

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[23] Ibid., p. 417.

[24] Ibid., p. 418.

[25] James B. Conant, Learning to Read. A Report of a Conference of Reading Experts (Princeton, New Jersey: Educational Testing Service, Inc., 1962) as cited by John J. DeBoer and Martha Dallman, The Teaching of Reading (revised edition. New York: Holt, Rinehart, and Winston Inc., 1964), p. 89.

[26] Clymer, loc. cit.

Social studies vocabulary. Social studies vocabulary is the list of words selected from geography and history textbooks, teachers' manuals, and glossaries of terms used in Louisiana in grades four through six.

III. ORGANIZATION OF THE STUDY

In Chapter I is provided a background for the problem under investigation. Emphasis is placed upon the entry and historical development of the phonics approach. Treatment is given the current status of the phonics approach.

In Chapter II is presented a summary of the related literature surveyed by this investigator. The earliest study was reported in 1930. A study of vowel situations appeared in 1952 and is also summarized. It was followed by one of a similar nature in 1963. The remaining studies surveyed were published in 1963 and afterward.

Procedures used in this study are delineated in Chapter III. Attention is given there to the methods used for collecting the social studies textbooks, and for developing the vocabulary tested. In Table I is presented a summary of the requirements written for use in developing the computer program. The special treatment given w and y is summarized. Treatment is also given to words that had multiple incidents of a phonic generalization application as is the consideration that was given homographs. The formula for computing the percentage of utility is discussed.

In Chapter IV the data compiled in this investigation are presented in tabular form. In Chapter V are included a summary of the study and a listing of concluding statements.

CHAPTER II

REVIEW OF RELATED LITERATURE

While the literature on various facets of phonics was found to be voluminous, there appeared to be relatively few studies pertaining directly to the utility of phonic generalizations.

Ina C. Sartorious reported one of the earliest studies although the purpose of her study related to spelling rather than especially to the utility of phonic generalizations in a specified vocabulary. Sartorious listed 4,065 spelling words used in several selected spelling series for grades two through eight. She determined the frequency of certain spelling elements. She isolated 382 such elements and listed the number of different ways each element could be pronounced. In fewer than half of the words that ended in a final and silent e was there a long vowel sound in the preceding vowel. The generalization applied to 587 of 4,065 spelling words. Of these 248 conformed to the generalization but 339 failed to conform. Thus, as early as 1930, the question was raised regarding the utility of a phonic generalization for pronunciation purposes.[1]

During the period 1930 through 1951 few, if any, studies were reported that dealt particularly with the usefulness of phonic generalizations.

In 1952, Ruth E. Oaks reported a study of vowel situations

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[1] Ina C. Sartorius, Generalization in Spelling, Contributions to Education 472 (New York: Teachers' College, Columbia University, 1930), 65 pp.

located in 1,966 words. The words were analyzed to determine which were conformations and which were exceptions to eight principles or generalizations.[2]

The generalizations were as follows:

1. When a stressed syllable ends in 'e', the first vowel in the syllable has its own 'long' sound and the final 'e' is silent.

2. When a stressed syllable containing only one vowel ends with that vowel, the vowel has its own 'long' sound.

3. When there is only one vowel in a stressed syllable and that vowel is followed by a consonant, the vowel has its 'short' sound.

4. When a word of more than one syllable ends with the letter 'y', the final 'y' has the sound of short 'i'. When a word of more than one syllable ends with the letters 'ey', the 'e' is silent and the 'y' again has the sound of the 'short' 'i'.

5. When a syllable contains only the one vowel, 'a', followed by the letter 'l' or 'w', the sound of the 'a' rhymes with the word 'saw'.

6. When there are two adjacent vowels in a syllable, the first vowel has its own 'long' sound and the second vowel is silent.

7. When, in a word of more than one syllable, the final syllable ends in the letter 'le', the 'l' becomes syllabic (i.e. it functions as a vowel) and is pronounced, but the 'e' is silent.

8. When in a word of more than one syllable, the final syllable ends in the letters 'en', the 'n' becomes syllabic and is pronounced, but the 'e' is silent.[3]

Oaks located 103 situations of single vowels, fifty-three

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[2]Ruth E. Oaks, "A Study of Vowel Situations in a Primary Reading Vocabulary," Education, 72 (May, 1952), 604-617.

[3]Ibid., p. 609-610.

situations embracing vowel digraphs, five diphthongs, and one trigraph. A total of 162 vowel situations was studied.

The investigator presented percentages of conformity for each of the eight principles listed and at four reader levels: primer, first-reader, second-reader, and third-reader. At the primer level Principles 4, 5, and 7 conformed 100 per cent; Principles 3, 2, 1, and 6 conformed 74, 71, 53, and 50 per cent, respectively. No words at the primer level related to Principle 8. At the first-reader level, Principles 4, 7, and 8 conformed 100 per cent, Principle 5 at 86 per cent, Principle 2 at 81 per cent, Principle 3, 69 per cent, and Principles 1 and 6, 56 per cent and 49 per cent, respectively. At the second-reader level, Principles 4, 7, and 8 were 100 per cent in conformity; Principle 5 conformed 96 per cent and Principle 2, 85 per cent; Principles 1, 3, and 6 were 67, 66, and 47 per cent in conformity. At the third-reader level Principles 4, 7, and 8 were again in 100 per cent conformity. Principles 5, 2, 1, 3, and 6 were in conformity in 95, 89, 71, 70, and 51 per cent of the vowel situations, respectively.[4] As a result of her findings, Oaks recommended that all the phonic principles which she studied be included in the primary program of reading instruction, exclusive of Principle 6 (in two adjacent vowels, the first gives its long sound, the second is silent) because of its numerous exceptions and Principle 8 (multisyllabic words ending in 'en') because of its infrequent occurrence.[5]

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[4] Ibid., p. 612.

[5] Ibid., p. 617.

Alvina T. Burrows and Zyra Lourie[6] made a further study of Principle 6, as investigated by Oaks and cited above. Burrows and Lourie used the 5,000 most frequently occurring words as reported by Henry D. Rinsland.[7] In these they found 1,728 incidents of two vowels side-by-side. Of these 668 conformed to the principle, stated by Oaks, but 1,060 did not. The investigators concluded that the principle was in error and that their findings indicated at least what should not be taught. They saw a possible alternative solution in helping the young reader to note vowel sounds in the common words he encounters and stated that in so doing the child ...

> ...may gain his greatest help from context and from consonants. As he gains a larger and larger reading vocabulary, hearing that the vowel sounds vary may be the most substantial help that he can take to the analysis of new words.[8]

Theodore Clymer[9] identified 121 phonics statements in four sets of basal readers used in the primary grades. From these reading series, he evolved a vocabulary to which he added words from one developed by Arthur I. Gates.[10] To a total of 2,600 words, he applied forty-five

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[6]Alvina T. Burrows and Zyra Lourie, "When Two Vowels Go Walking," The Reading Teacher, 17 (November, 1963), 79-82.

[7]Henry D. Rinsland, A Basic Vocabulary of Elementary School Children (New York: The Macmillan Company, 1945), 636 pp.

[8]Burrows and Lourie, op. cit., p. 82.

[9]Theodore Clymer, "The Utility of Phonic Generalizations in the Primary Grades," The Reading Teacher, 16 (January, 1963), 252-258.

[10]Arthur I. Gates, A Reading Vocabulary for the Primary Grades (New York: Bureau of Publications, Teachers' College, Columbia University, 1935), 29 pp.

generalizations derived from the 121 statements identified. After syllabicating and respelling each word phonetically, he applied every generalization which pertained to it, then computed a percentage of utility as reflected in its compliance or non-compliance. To be effective, Clymer stated that each generalization should have at least twenty applicable incidents among the 2,600 words and have a percentage of utility of at least seventy-five. Eighteen of the generalizations (Table XLVII, pages 67-77) satisfied his criteria. Clymer used the Webster's New Collegiate Dictionary as the authority for pronunciation.[11] In Table XLVII is presented a listing of Clymer's generalizations.

Clymer concluded that many of the generalizations were of limited value and urged that exceptions be mentioned when such principles were presented to children. He noted that a good reason for their use would be to encourage children to examine words carefully for sound-letter relationships. His results are reported in Table XLVIII.

Mildred H. Bailey[12] followed a similar procedure and tested Clymer's forty-five generalizations in 5,773 words. Her vocabulary was derived from reading textbooks of eight series published for grades one through six. The words were syllabicated and phonetically respelled according to the pronunciations authorized by the Webster's New Collegiate

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[11] Webster's New Collegiate Dictionary (Springfield, Massachusetts: G. and C. Merriam Company, Publishers). No publication date was cited by Clymer.

[12] Mildred H. Bailey, "An Analytical Study of the Utility of Selected Phonic Generalizations for Children in Grades One Through Six" (unpublished Doctoral dissertation, The University of Mississippi, University, Mississippi, 1965).

Dictionary.[13] A computer program was utilized to list all the words among the 5,773 which were applicable to each generalization. Forty-five such lists were studied and percentages of utility computed.[14] Bailey found that twenty-six of the generalizations satisfied Clymer's percentage of utility criterion but that two did not have as many as twenty incidents applicable to them. It is noted that Bailey counted each applicable occurrence; some words contained more than one.

Bailey recommended further research regarding the generalizations, including the application in vocabularies evolved from science, social studies, and arithmetic, the testing of them through the use of the schwa symbol (Her dictionary of authority did not use the schwa but later editions of the dictionary do), and relating of the principles to regional pronunciations. Tabulation of the results of Bailey's study is indicated in Table XLVIII.[15]

Robert Emans[16] used the procedures developed by Clymer and applied the generalizations to a randomly chosen 10 per cent sampling of words from the Thorndike and Lorge list.[17] Emans used a vocabulary limited to words for grade four and beyond. Webster's New Collegiate

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[13]Webster's New Collegiate Dictionary (Springfield, Massachusetts, G. and C. Merriam Company, Publishers, 1961).

[14]Bailey, op. cit., pp. 79-80.

[15]Bailey, op. cit., pp. 93-95.

[16]Robert Emans, "The Usefulness of Phonic Generalizations Above the Primary Grades," The Reading Teacher, 20 (February, 1967), 419-425.

[17]E. L. Thorndike and I. Lorge, The Teacher's Word Book of 30,000 Words (New York: Teachers' College, Columbia University, 1944).

Dictionary of 1959 was used as his pronunciation authority.[18] A total of 1,944 words was examined.

In the upper-grade vocabulary tested by Emans, only sixteen generalizations satisfied Clymer's criteria but Emans noted other important differences as well:

> Five generalizations (10, 21, 25, 29, and 44) were found by Clymer to be useful for words on the primary level, although in this study they were not found to be useful for words beyond the primary level. Generalization 21 had a utility of only 67 per cent in this study compared with 95 per cent in the previous study. In this study, generalizations 10, 15, 29, and 44 failed to meet the criterion..." of twenty applicable words "...However, generalization 44 would have met the criterion if a proportionate number of words to the length of the word list had been used.
>
> Three generalizations (24, 36, and 38) met the criteria on words beyond the primary level, although they failed to meet the criteria for words on the primary level. Generalization 24 had a percentage of utility of 80, while in the previous study it had a percentage of only 64. Generalization 36 was found to apply to only five words in the study of Clymer but to 85 words in this study. Generalization number 38 had a utility percentage of 80 in this study but only 72 in Clymer's study.[19]

Emans found Generalization Number 1 (two vowels side-by-side) seriously deficient in utility. It produced a percentage of 18 per cent while Clymer's primary word list yielded 45 per cent.[20]

Emans noted that such Generalizations as 6, 7, and 8 served to explore the exceptions related to Number 1. His findings led him to

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[18] Webster's New Collegiate Dictionary (Springfield, Massachusetts: G. & C. Merriam Company, Publishers, 1959).

[19] Emans, op. cit., p. 420.

[20] Emans, op. cit., p. 423.

believe that "...the generalization may best be applied in the modification of some of the other rules..."[21] He further stated:

> There may be other generalizations, including some particularly suitable for the intermediate grades, unstudied in this investigation, which would be more helpful than the ones included....The percentage of utility used as a criterion may be too high, possibly 50, 25, or an even lower percentage of utility would be better than no aid at all. A better criterion may be the total number of words in which a generalization functions, rather than the percentage of utility.[22]

Emans listed eighteen modifications of Clymer's original forty-five generalizations all of which obtained a utility of 78 per cent or above, with eight of them rating 90 per cent or over.[23]

In a later report, Emans compared Clymer's results with his findings. After noting that Clymer's earlier investigation was a stimulant to further research, he again cited his own proposed modifications in eighteen generalizations but also added a number of points.[24]

Clymer stated Generalization 9 as being: "When words end with silent e, the preceding a or i is long." When the generalization was applied by Emans, a utility of only 48 per cent resulted. Emans noted that if his listed words which ended in le and ive were excluded, the utility of the generalization reached 71 per cent.[25] It is noted that

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[21] Ibid.

[22] Ibid., p. 425.

[23] Ibid., p. 424.

[24] Robert Emans, "When Two Vowels Go Walking and Other Such Things," The Reading Teacher, 21 (December, 1967), 262-269.

[25] Ibid., p. 266.

this generalization is a modification of that quoted by Sartorius as having less than 50 per cent conformation in her study of spelling words.[26]

As Generalization 16 Clymer wrote, "When y is the final letter in a word, it usually has a vowel sound," and tabulated an 84 per cent utility but Emans demonstrated a 98 per cent usefulness. Whenever Clymer's Generalization 10, "In ay the y is silent and gives a its long sound," was combined with Generalization 16 as an exception clause, Emans noted, the modified generalization would reach 100 per cent utility in words from his own study.[27]

As Generalization 22, Clymer tested the statement: "When c is followed by e or i, the sound of s is likely to be heard." Emans determined a usefulness of 90 per cent, but after studying his nine exceptions, he noted that in each case sh rather than s was heard. For a 100 per cent utility, he suggested the following restatement: "When c is followed by e or i the sound s or sh is likely to be heard."[28]

Emans found a utility of only 42 per cent for Clymer's Generalization 37: "In many two- and three-syllable words, the final e lengthens the vowel in the last syllable." Emans studied his 132 non-conformations and noted that fifty ended in le and eleven in ive. Were this fact added in an exception clause, the generalization

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[26]Sartorius, loc. cit.

[27]Emans, "When Two Vowels Go Walking and Other Such Things," op. cit., p. 266.

[28]Ibid., pp. 266-267.

would rise in utility from 42 to 64 per cent.[29]

Emans found 163 exceptions to Clymer's Generalization 38: "If the first vowel sound in a word is followed by two consonants, the first syllable usually ends with the first of two consonants." Among these 163 exceptions Emans located 123 that related to five other generalizations cited by Clymer. Whenever the five word parts which were involved (vowels modified by r, double consonants, ck, prefixes, and one of the three combinations th, ch, sh) were added to Generalization 38 in an exception clause, its utility would rise from 80 to 96 per cent in the Emans' study.[30]

Muriel A. Affleck[31] examined the first 6,000 words of the Thorndike-Lorge[32] listing of 30,000 words to determine the percentages of utility of six selected vowel generalizations. The first 2,000 words were common in the reading vocabulary of the primary grades; the remaining 4,000 were found most frequently in the intermediate reading vocabularies. The two dictionaries of authority used for pronunciation were the Thorndike-Barnhart Beginning Dictionary[33] and the Thorndike-

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[29]Ibid., p. 268.

[30]Ibid.

[31]Muriel A. Affleck, "The Utility of Selected Phonic Principles in a Vocabulary for the Intermediate Grades" (unpublished Doctor's dissertation, Colorado State College, Greeley, 1967).

[32]E. L. Thorndike and I. Lorge, loc. cit.

[33]E. L. Thorndike and Clarence L. Barnhart, Thorndike-Barnhart Beginning Dictionary (Chicago: Scott, Foresman and Company, 1959).

Barnhart Junior Dictionary.[34] The schwa symbol was used in the study.

Affleck derived six vowel generalizations from seventy-one statements located in reading programs and textbooks on the teaching of reading.

Affleck's first vowel principle was stated: "Any vowel letter or vowel combination in an unaccented syllable is unstressed and usually symbolizes a short i sound or a schwa." The investigator located, among intermediate reading words, 4,229 occurrences to which the principle applied. Of these, 3,766 conformed for a percentage of utility of 89 per cent.

Principle 2 stated: "A single vowel letter at the end of an accented syllable or a monosyllabic word usually symbolizes the long sound associated with that vowel letter." Syllables from the intermediate vocabulary applied in 444 instances. Of these, 379 conformed for a utility percentage of 85 per cent.

The third principle was "A single vowel letter not at the end of an accented syllable or monosyllabic word usually symbolizes the short sound associated with that vowel letter." It was applicable in 2,166 intermediate syllables of which 1,962 conformed for a 91 per cent utility.

Principle 4 stated: "In an accented syllable or monosyllabic word a single vowel letter followed by a final e separated from the preceding vowel by one or more consonants usually symbolizes the long

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[34] E. L. Thorndike and Clarence L. Barnhart, Thorndike-Barnhart Junior Dictionary (Chicago: Scott, Foresman and Company, 1959).

sound of that vowel." Of 455 applicable syllables, 344 complied. The percentage of utility was 76 per cent.

Principle 5 stated: "In an accented syllable or monosyllabic word a single vowel letter followed by the letter r usually symbolizes a vowel sound that is neither the long nor the short sound of that vowel but a different sound." In 440 applicable syllables, Affleck located 399 conformations and computed a percentage of utility of 90 per cent.

The final of the six principles was expressed as follows: "When two vowel letters appear together, the vowel sound is usually the long sound associated with the first vowel letter." In 792 applications there were 357 conformations. A percentage of utility of 45 per cent was computed.

Of the total 8,526 applicable syllables found in words at the intermediate vocabulary level, Affleck determined that 7,207 applied to at least one of the six principles for an overall utility percentage of 85.[35]

Summary of the review of related literature. The earliest related investigation reviewed was the study reported by Sartorius in which the generalization which related to final silent e, preceded by a long-sounded vowel, proved defective. Of 587 words to which it applied, fewer than one-half conformed. The Oaks study was an application of eight phonic generalizations to a vocabulary of 1,966 words and the reporting of their percentages of utility on levels from primer

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[35]Affleck, op. cit., pp. 111-125.

through third reader. A 1963 report by Burrows and Lourie cast further doubt on the generalization involving two adjacent vowels. The Clymer investigation resulted in the tabulation of percentages of utility in forty-five generalizations which he evolved from statements printed in four basal reader series. Both Bailey and Emans tested Clymer's generalizations for utility, but in different vocabularies. Bailey used a listing of terms introduced in basal readers, grades one through six, but Emans chose a random sampling of the Thorndike and Lorge list for grade levels beyond the primary. Emans suggested eighteen modifications of the generalizations in order to show that the percentages of utility could be increased.

Bailey urged that the generalizations be investigated in vocabularies chosen from such content fields as science, social studies, and arithmetic. Such studies could not be located in the literature. Bailey also recommended that the generalizations be tested in dictionaries utilizing the schwa symbol.[36]

Affleck tested six vowel generalizations in a 6,000 word vocabulary chosen from primary and intermediate vocabularies.[37] The dictionary used as an authority in the Affleck study utilized a schwa. For the six generalizations the utility percentages varied from 45 to 90 per cent. The overall utility for the 8,526 applicable occurrences was 85 per cent.

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[36]Bailey, "An Analytical Study of the Utility of Selected Phonic Generalizations for Children in Grades One Through Six," op. cit. pp. 93-94.

[37]Affleck, op. cit.

CHAPTER III

PROCEDURES

The procedures used in developing the geography and history vocabulary used in the study are presented in Chapter III. Included are the requirements printed for use by computer personnel in constructing a program for analyzing the vocabulary relative to applicability of the phonic generalizations. The procedure in which the computer-developed listings was utilized in developing the utility percentages for each of the phonics generalizations is delineated, as is the method of treating homographs and words with multiple phonic applications.

Collection of Louisiana State Department of Education adopted textbooks. Copies of the fourth, fifth, and sixth grade history and geography textbooks were obtained from publishers, local libraries, and the social studies section of the Louisiana State Department of Education. Fifty-one textbooks and teachers' manuals were accumulated and used in the study.[1] A complete list is presented in the Appendix. All books on the list approved as of August 1, 1967, were available except the teachers' manual for Neighbors Across the Seas.

Development of the social studies vocabulary. A vocabulary of words introduced by the authors was developed. This procedure was followed in order to eliminate the common words not taught as a part of

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[1]Louisiana State Department of Education State-owned (Free) Textbooks, Form 2-Textbook Catalog (Baton Rouge, Louisiana: Materials of Instruction Section, undated), pp. 10-11.

the history or geography. No effort was made to select words according to frequency of occurrence. A single listing of words, each of which was introduced in one or more textbooks at grade levels four, five, or six, was evolved.

Each teacher's manual or teacher's edition was examined initially. The author's method of developing vocabulary was identified in prefaces and in unit presentations. Words chosen were listed in the manual for introduction to the students. In some instances these words were listed at ends of units with little explanatory information. Certain publishers had vocabulary circled in the teacher's edition while other publishers underlined words to be introduced in the margins of such textbooks. If not otherwise identified, the words italicized or printed in bold-faced type in the student textbook were chosen by the investigator.

Whenever the vocabulary was not identified by any stated method, the investigator chose words from the glossaries or the pronouncing indexes, a combination of glossary and index.

Each word selected was placed on cards clearly identified as bibliographic references in terms of grade level. From these, each word was written on a smaller card for alphabetization, then crossed out on the larger card. Duplications among the word cards were removed. Duplicate cards were reused but all of the original words were retained on them for future reference. Finally, the remaining alphabetized cards were used to compile the initial social studies vocabulary.

A total of 4,111 words resulted from these procedures. The

Thorndike-Barnhart High School Dictionary, Fourth Edition,[2] was used as the pronunciation authority. Of the 4,111 words, 2,613 were pronounced in the chosen dictionary. The remaining 1,498 were eliminated from the study.

Development and use of a computer program in the study. A computer program was developed to separate the words into the forty-five categories required by the phonics generalizations. The 2,613 were spelled, syllabicated, and accented for the programmers. For their benefit, primary accents were initially shown in black; the secondary accents were marked in red. A special note was written to indicate syllables receiving equal stress.

Computer personnel at the Louisiana State University Computer Center were furnished a listing of words as described above, together with a copy of Clymer's generalizations. It became necessary to interpret these in terms of requirements demanded by the generalizations. The seventy-three requirements developed are shown as Table I. Each requirement related to one of the forty-five generalizations.

Difficulties in programming required certain changes. It was necessary to eliminate the secondary accent and accents of equal stress from the computer program. Words applicable to Generalization 19 were isolated by hand. Words of more than two syllables to which Generalization 33 applied were also isolated by visual inspection of the total list. Because the program did not provide for computer recognition of

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[2]E. L. Thorndike and Clarence L. Barnhart, High School Dictionary (fourth edition; Chicago: Scott, Foresman and Company, 1965).

TABLE I

REQUIREMENTS NECESSARY TO ISOLATE VOCABULARY TERMS APPLICABLE TO EACH OF FORTY-FIVE PHONIC GENERALIZATIONS DEVELOPED BY THEODORE CLYMER

Generalization Number	Requirement
1	1. Select all words in which two or more vowels (a, e, i, o, u, w, y) occur side-by-side.
2	2. Select all one-syllable words (those having no hyphen) that contain only one vowel and have a consonant (any letters except a, e, i, o, u) in the initial and in the final position.
2	3. Select all four-letter words that contain a vowel (a, e, i, o, u) in the second or third position and which have a consonant in the initial and final position.
2	4. Select all words of five or more letters that contain a single vowel (a, e, i, o, u) and which have a consonant (any letter except a, e, i, o, u) in the initial and final position.
2	5. Select all one-syllable words (those without hyphens) that contain a w.
2	6. Select all one-syllable words (those without hyphens) that contain a y.
3	7. Select all words having only one of a, e, i, o, u and that in the final position.
3	8. Select all words having only one y and that in the final position.
3	9. Select all words having only one w and that in the final position.
4	10. Select all words that have an e in the final position and which have only one more vowel (a, e, i, o, u) in any other position.
4	11. Select all words that have an e in the final position and only one w in any other position.

TABLE I (continued)

REQUIREMENTS NECESSARY TO ISOLATE VOCABULARY TERMS APPLICABLE TO EACH OF FORTY-FIVE PHONIC GENERALIZATIONS DEVELOPED BY THEODORE CLYMER

Generalization Number		Requirement
4	12.	Select all words that have an e in the final position and only one y in any other position.
		Select every word that contains one of the following:
5	13.	ar
5	14.	er
5	15.	ir
5	16.	or
5	17.	ur
5	18.	wr
5	19.	yr
		Select all words containing one of the following:
6	20.	ai
6	21.	ea
6	22.	oa
6	23.	ui
7	24.	ie
8	25.	ee
9	26.	Select all words ending in e which have an a in some other than the position immediately preceding it.
9	27.	Select all words ending in e which have an i in some other than the position immediately preceding it.

TABLE I (continued)

REQUIREMENTS NECESSARY TO ISOLATE VOCABULARY TERMS APPLICABLE TO EACH OF FORTY-FIVE PHONIC GENERALIZATIONS DEVELOPED BY THEODORE CLYMER

Generalization Number	Requirement
10	28. Select all words containing ay.
11	29. Select all words containing igh.
12	30. Select all words containing wa.
13	31. Select all words containing ew.
14	32. Select all words containing ow.
15	33. Select all words containing w.
16	34. Select all words ending in y.
17	35. Select all words containing y.
18	36. Select all words containing al.
18	37. Select all words containing aw.
18	38. Select all words containing au.
19	39. Select all words ending are.
20 and 21	40. Select all words containing ch.
22	41. Select all words containing ce.
22	42. Select all words containing ci.
23	43. Select all words containing co.
23	44. Select all words containing ca.
24	45. Select all words containing gi.
24	46. Select all words containing ge.
25	47. Select all words containing ght.

TABLE I (continued)

REQUIREMENTS NECESSARY TO ISOLATE VOCABULARY TERMS APPLICABLE TO EACH OF FORTY-FIVE PHONIC GENERALIZATIONS DEVELOPED BY THEODORE CLYMER

Generalization Number		Requirement
26		(Generalization does not require programming).
27		(Generalization does not require programming).
28	48.	Select all words in which a consonant is doubled (any letter except a, e, i, o, u): for example bb, cc, dd.
29	49.	Select all words ending in ck.
30	50.	Select all words having only two syllables and that are followed by an accent mark: for example, sam-ple. (actually a word with one hyphen, followed by an accent).
31	51.	Select all words beginning a- (read "a hyphen").
31	52.	Select all words beginning in- (read "in hyphen").
31	53.	Select all words beginning re- (read "re hyphen").
31	54.	Select all words beginning ex- (read "ex hyphen").
31	55.	Select all words beginning de- (read "de hyphen").
31	56.	Select all words beginning be- (read "be hyphen").
32	57.	Select all two-syllable words (having one hyphen) and ending in y.
33	58.	Select all words having accented syllables which contain a single vowel (a, e, i, o, u): for example ban'-ish.
34	59.	Select all words containing y in the last syllable (or after the final hyphen).
35	60.	Select all words ending -ture (read "hyphen t-u-r-e.")

TABLE I (continued)

REQUIREMENTS NECESSARY TO ISOLATE VOCABULARY TERMS APPLICABLE TO EACH OF FORTY-FIVE PHONIC GENERALIZATIONS DEVELOPED BY THEODORE CLYMER

Generalization Number		Requirement
36	61.	Select all words ending -tion (read "hyphen t-i-o-n").
37	62.	Select all two-syllable words ending in e.
37	63.	Select all three-syllable words ending in e.
38	64.	From all words of more than one syllable, select all those in which the first vowel (a, e, i, o, u) is followed by two consonants: examples din-ner, a-breast.
39	65.	From all words of more than one syllable, select those in which the first vowel (a, e, i, o, u) is followed by a single consonant: examples chi-na, a-bil-i-ty.
40	66.	Select all words of more than one syllable that end in le.
		From all words of more than one syllable select those in which the first vowel (a, e, i, o, u) is followed by:
41	67.	th (ath, eth, ith, oth, uth)
41	68.	ch (ach, ech, ich, och, uch)
41	69	sh (ash, esh, ish, osh, ush)
42	70.	Select all words of more than one syllable that contain v.
43	71.	Select all words in which there is only one vowel (a, e, i, o, u).
44	72.	Select all words containing a single e and ending in a consonant (any letter except a, e, i, o, u).
45	73.	Select all words containing an r in the last syllable.

last syllables, it was also necessary to locate by hand those applicable to Generalization 45.

Use of w and y as vowels. In the computer program, only a, è, i, o, and u were treated as vowels. When applying the generalizations involving situations where w or y served as vowels (as in Generalizations 16 and 17), it was necessary to inspect each word containing a single instance of either of the letters. The following procedures were used:

1. y is a vowel except when used to initiate a word or syllable.
2. w is a vowel in words and syllables except in the initial position, and in cases where it is the second letter, following a consonant. Examples are wharf and dweller.

Bailey followed the same procedures in her treatment of w and y.[3]

Treatment of multiple incidents. Some words had more than one syllable or word part that was applicable to a particular phonic generalization. For example, the word cocoa had two incidents of co. For Generalization 23 two incidents were recorded from the word.

Treatment of homographs. When two terms had the same spelling but different pronunciations, the terms were treated as two different words. For example conflict, as a noun was a conformation for Generalization 30; for the same generalization it was an exception when used as

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[3]Mildred H. Bailey, "An Analytical Study of the Utility of Selected Phonic Generalizations for Children in Grades One Through Six," (unpublished Doctoral dissertation, The University of Mississippi, University, Mississippi, 1965), pp. 37-38.

a verb. It was therefore considered as two words for the purposes of this study.

Computation of the percentages of utility. Each word in the forty-five word lists was analyzed for its conformation or exception to the appropriate phonics generalization. A check was made for each conformation and a cross for each exception. The two categories were added to determine the total number of applicable incidents for a specific generalization. The percentage of utility was computed by dividing the number of conforming incidents by the total applicable incidents.

Summary. The following procedures were used in compiling and tabulating data used in this study:

1. Assembled the Louisiana State adopted textbooks for fourth, fifth, and sixth grade geography and history
2. Developed the history and geography vocabulary used in the study
3. Developed the computer program for isolating words applicable to each phonics generalization
4. Determined the use of w and y as vowels
5. Treated words with multiple incidents applicable to a phonics generalization
6. Treated homographs
7. Computed the percentages of utility for each phonics generalization

CHAPTER IV

PRESENTATION OF DATA

Data gained from testing a social studies vocabulary with each of the phonic generalizations developed by Clymer[1] are presented in tabular form. The vocabulary was evolved from words identified in fourth, fifth, and sixth grade geography and history textbooks adopted by the Louisiana State Board of Education.[2]

In Tables II - XLVII are presented the number of incidents applicable to the generalization named. The number of conformations, exceptions, and the percentage of utility for each generalization are presented in an appropriate table. Examples are cited in all cases where applicable incidents were found.

The Thorndike-Barnhart High School Dictionary,[3] Fourth Edition was used as the authority for determining the designation of each incident either as a conformation or exception.

Utility of Generalization 1. When there are two vowels side by side, the long sound of the first vowel is heard, and the second vowel is usually silent.

The computer isolated words containing at least one instance

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[1]Theodore Clymer, "The Utility of Phonic Generalizations in the Primary Grades," The Reading Teacher, 16 (January, 1963), 252-258.

[2]Louisiana State Department of Education, State-owned (Free) Textbooks, Form 2 - Textbook Catalog (Baton Rouge, Louisiana: Materials of Instruction Section, undated, pp. 10-11.

[3]E. L. Thorndike and Clarence L. Barnhart, High School Dictionary (fourth edition; Chicago: Scott Foresman and Company, 1965).

of any two adjacent vowels (a, e, i, o, u, y, w). Incidents in which w and y acted as consonants numbered 115, including such words as warp, swamp, and yard. They were vowels in such words as sow, buyer, dye, and bay. Thirteen incidents of three adjacent vowels occurred. Six incidents of four adjacent vowels were located. The number of incidents ranged from one in the word, tea, to three in the word mountainous. Such words as linsey-woolsey and causeway contained both conforming and nonconforming incidents.

A total of 897 incidents was found applicable to the generalization. A utility of 27 per cent was computed with 241 incidents conforming and 656 incidents noted as exceptions. Results appear in Table II.

TABLE II

UTILITY OF GENERALIZATION 1

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
897	241 (peace)	656 (pier)	27

Utility of Generalization 2. When a vowel is in the middle of a one-syllable word, the vowel is short.

The total number of applicable incidents was located, then three separate sub-categories were examined: the single vowel as the central letter in a word, the single vowel as the second or third letter of a four-letter word, and the single vowel located within a word of more than four letters. Twenty and thirty exceptions were applicable to the first and third sub-categories, respectively. Examples included the

conformations clock and grass and exceptions sport and grind.

The computer isolated 318 incidents. Of these 227 conformed and 91 were non-conforming. The percentage of utility was determined as 71 per cent. These results, together with those of the sub-category studies, appear in Table III.

The computer listed for this generalization two-syllable words in which one of the syllables contained only a y as a vowel. These are clearly inapplicable. Therefore, these errors, which numbered 51, were eliminated. Included were such words as taffy and gypsum.

TABLE III

UTILITY OF GENERALIZATION 2

	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
Applicable middle letter incidents	99	79 (cod)	20 (chart)	80
Applicable incidents as one of the middle two letters in a word of four letters	133	92 (bran)	41 (boll)	69
One vowel within a word of more than four letters	86	56 (hatch)	30 (wharf)	65
Totals	318	227	91	71

Utilization of Generalization 3. If the only vowel letter is at the end of a word, the letter usually stands for a long sound.

Only two applicable instances were found, one conformation, dry, and one exception, two. The percentage of utility was therefore 50 per cent. The findings are presented in Table IV.

TABLE IV

UTILITY OF GENERALIZATION 3

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
2	1 (dry)	1 (two)	50

Utility of Generalization 4. When there are two vowels, one of which is final e, the first vowel is long, and the e is silent.

The principle was applicable to 175 words of which 101 conformed and 74 appeared as exceptions. Utility was computed at 58 per cent.

Certain words were eliminated from the computer-developed list. Such words as brassware and wholesome first appeared applicable, relative to last syllables; these were eliminated by careful checking.

In such words as dye, lyre, and rye, the y was considered the same as long i and these were treated as conformations.

Results are indicated in Table V.

TABLE V

UTILITY OF GENERALIZATION 4

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
175	101 (acre)	74 (chicle)	58

Utility of Generalization 5. The r gives the preceding vowel a sound that is neither long nor short.

A search was made for all words containing one or more of the elements ar, er, ir, or, ur, yr, and wr. No incident of an applicable wr element was located (w as a vowel), but such words as papyrus and tyrant were usable applications of the yr combination. Burial and cereal were considered conforming terms even though the short and long sounds exhibited in pronunciation were not those of vowels used in the spellings of them. Instead the u in burial has a short e sound while the first e in cereal is sounded as short i. The word character had both a conforming and a non-conforming element. It was one of 52 words having two applicable incidents in them.

The generalization was applicable in 885 incidents of which 831 conformed. There were 54 exceptions in which the vowel preceding r actually did have a short or long sound. A utility of 94 per cent was computed and appears, with examples, in Table VI.

TABLE VI

UTILITY OF GENERALIZATION 5

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
885	831 (picture)	54 (inherit)	94

Utility of Generalization 6. The first vowel is usually long and the second silent in the digraphs ai, ea, oa, and ui.

A total of 240 incidents of the four digraphs was located in the vocabulary. Of these 121 conformed to the generalization and 119 were exceptions. The words maintain and railroad had two incidents in each. Such homographs as lead were recorded as conforming with respect to their pronunciations as verbs and as exceptions when pronounced as nouns. A percentage of utility of 50 per cent was computed for the total. In Table VII are reported the utility percentages for each of the digraphs. Of these only the ui lacked a single conformation incident. All showed exceptions.

TABLE VII

UTILITY OF GENERALIZATION 6

Digraphs	Number Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
ai	64	37 (drainage)	27 (air)	58
ea	117	58 (bleak)	59 (cereal)	50
oa	39	26 (ferryboat)	13 (abroad)	67
ui	20	0	20 (cruise)	0
Totals	240	121	119	50

Utility of Generalization 7. In the phonogram ie, the i is silent, and the e has a long sound.

Forty-three incidents of the phonogram were located. In no word were there multiple occurrences. Of the 43 incidents, 14 conformed to the principle and 29 were exceptions. A utility of 33 per cent was computed, as indicated in Table VIII.

TABLE VIII

UTILITY OF GENERALIZATION 7

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
43	14 (shield)	29 (hosiery)	33

Utility of Generalization 8. Words having a double e usually have the long e sound.

Fifty-two words had at least one occurrence of double ee but none had two incidents. Of these 47 conformed for a utility percentage of 90. In each of the 5 exceptions, the words ended in eer and had the ir sound, as shown in Table IX.

TABLE IX

UTILITY OF GENERALIZATION 8

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
52	47 (creek)	5 (pioneer)	90

Utility of Generalization 9. When words end in silent e, the preceding a or i is long.

Because the first generalization dealt with all words with vowels side-by-side, Generalization 9 was considered to pertain only to words ending in silent e and preceded by a or i in any other position than just before it, yet within the same syllable. When no other a or i appeared in the last syllable, the last a or i in the previous syllable was taken into account. Such a word was marble, which was considered an exception. Thus the generalization was applicable to 377 incidents. Of these 179 conformed and 198 appeared as exceptions. The utility was computed at 47 per cent. In Table X, the results, including examples, are presented.

TABLE X

UTILITY OF GENERALIZATION 9

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
377	179 (strike)	198 (average)	47

Utility of Generalization 10. In ay, the y is silent and gives a its long sound.

Each ay occurrence was examined regardless of its position in the word. Only 12 incidents were located. Ten were conformations, but two were exceptions. In every instance, ay was in the final position of a syllable and in five cases the word ended in way. The utility was computed at 83 per cent. Results and examples are shown in Table XI.

TABLE XI

UTILITY OF GENERALIZATION 10

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
12	10 (rayon)	2 (bayou)	83

Utility of Generalization 11. When the letter i is followed by the letters gh, the i usually stands for its long sound, and the gh is silent.

Of the 14 incidents of igh located, 9 conformed and 5 were

exceptions. In every exception as in neighborhood and straight, the gh followed double vowel situations. Conformations allowed a utility of 64 per cent. Results are indicated in Table XII.

TABLE XII

UTILITY OF GENERALIZATION 11

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
14	9 (bullfight)	5 (straight)	64

Utility of Generalization 12. When a follows w in a word, it usually has the sound a as in was.

In the dictionary used as the authority, the a in was had the short o sound. Forty-five incidents occurred in the vocabulary examined. Eight incidents conformed to the generalization. It was assigned a utility percentage of 18. In each of the eight conformations, wa was in the initial position. In 28 of the 37 exceptions, the incident appeared in compound words. Thirty-one of the exceptions contained an instance of ware, ward, war, or way. Examples and final results are reported in Table XIII.

TABLE XIII

UTILITY OF GENERALIZATION 12

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
45	8 (wassail)	37 (stowaway)	18

Utility of Generalization 13. When e is followed by w, the vowel sound is the same as represented by oo.

In the dictionary used as the authority, oo was shown marked the same as the u in rule. Sixteen instances were located. Nine of these were exceptions and the remaining 7 conformed to the generalization. Of the exceptions, 5 of the ew situations connected two parts of compound words. The percentage of utility was calculated at 44 per cent. Results and examples are shown in Table XIV.

TABLE XIV

UTILITY OF GENERALIZATION 13

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
16	7 (steward)	9 (curfew)	44

Utility of Generalization 14. The two letters ow make the long o sound.

Forty-nine words had incidents of ow. Twenty-seven conformed and 22 were exceptions. The utility percentage of 55 per cent, together with illustrative examples, is presented in Table XV.

TABLE XV

UTILITY OF GENERALIZATION 14

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of of Utility
49	27 (windrow)	22 (cauliflower)	55

Utility of Generalization 15. W is sometimes a vowel and follows the vowel digraph rule.

W was interpreted as a consonant only in the initial positions as in walrus and in the second position following other consonants such as in dwarf and tweed. In other positions it was considered a vowel. In 69 incidents w was part of a vowel digraph; 27 conformed to the principle stated. The remaining 42 incidents were exceptions. The percentage of utility was calculated at 39 per cent and is shown in Table XVI.

TABLE XVI

UTILITY OF GENERALIZATION 15

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
69	27 (winnow)	42 (sinew)	39

Utility of Generalization 16. When y is the final letter in a word, it usually has a vowel sound.

A total of 219 words ended in y. Of these 193 had no vowel

other than y in the final syllable. The remaining 26 contained a sounded a, e, i, o, or u and the y seemed silent. In each of the 26 words, however, the combination qualified as a vowel digraph in Generalization 1. In such cases, it was reasoned, that final y was actually a vowel. Thus y was considered a silent vowel in the 26 incidents and also counted exceptions to Generalization 16. The percentage of utility was computed at 88 per cent and is presented in Table XVII.

TABLE XVII

UTILITY OF GENERALIZATION 16

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
219	193 (tannery)	26 (piney)	88

Utilization of Generalization 17. When y is used as a vowel in words, it sometimes has the sound of long i.

A relatively low percentage of utility was computed for this generalization. Though 279 incidents occurred, only 35 conformed while 244 were exceptions. The utility was 13 per cent. Virtually every exception was an instance in which y was the final letter with a sound other than long i. In only 7 of the 35 conformations was y in the final position and sounded as long i. Results are shown in Table XVIII.

TABLE XVIII

UTILITY OF GENERALIZATION 17

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
279	35 (scythe)	244 (creamery)	13

Utility of Generalization 18. The letter a has the same sound (ô) when followed by l, w, and u.

All words containing incidents of al, au, or aw were isolated for analysis. Applicable incidents totaled 222. Of these 38 conformed for an overall utility of 17 per cent while the remaining 184 were exceptions. Further study revealed that al incidents were far more numerous and contained so many exceptions that the overall percentage of utility was greatly reduced. The combination al occurred 191 times with 15 conformations and a utility of 8 per cent. By contrast au occurred 19 times and 14 conformations accounted for a 74 per cent utility. Nine of 12 aw incidents conformed for a utility of 75 per cent. A summary of results appears in Table XIX.

TABLE XIX

UTILITY OF GENERALIZATION 18

	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
Incidents of al	191	15 (alderman)	176 (coal)	8
Incidents of au	19	14 (bauxite)	5 (authority)	74
Incidents of aw	12	9 (macaw)	3 (seaweed)	75
Totals	222	38	184	17

Utility of Generalization 19. When a is followed by r and final e, we expect to hear the sound heard in care.

The generalization was applied by seeking out all words ending in are and determining if these were marked diacritically as the are of care. Eight words were found applicable. Because there were no exceptions, the utility percentage is shown as being 100 per cent. Because the computer program was not designed to denote final elements, the applicable words were isolated by hand. Results appear in Table XX.

TABLE XX

UTILITY OF GENERALIZATION 19

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
8	8 (warfare)	0	100

Utility of Generalization 20. When c and h are adjacent to each other, they make only one sound.

The generalization was interpreted to mean that ch has one sound where the c and h are not placed in two syllables when marked diacritically. In the 105 incidents of occurrence, there were no exceptions. Church and churchman had double incidents of ch and accounted for 4 of the 105 occurrences. A utility percentage of 100 was computed. Results are shown in Table XXI.

TABLE XXI

UTILITY OF GENERALIZATION 20

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
105	105 (monarch)	0	100

Utility of Generalization 21. Ch is usually pronounced as it is in kitchen, catch, and chair, not like sh.

As was true in Generalization 20, there were 105 applicable incidents. Of this number, 74 were pronounced as ch in catch and conformed for a percentage of utility computed at 70 per cent. Among the 31 exceptions 24 were pronounced as ch in archeology and 7 were sh sounds as in chivalry. Both church and churchman were again counted as containing double incidents. These accounted for 4 of the 74 applications. Results for Generalization 21 are shown in Table XXII.

TABLE XXII

UTILITY OF GENERALIZATION 21

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
105	74 (vetch)	31 (scholar)	70

Utility of Generalization 22. When c is followed by e or i, the sound of s is likely to be heard.

Separate tallies were kept of ce and ci incidents. Ce occurred 115 times and conformed in 111 instances for a utility percentage of 97. Ci occurred 59 times. Of these 40 conformed to the generalization for a utility of 68 per cent. Of the 174 total occurrences of ce and ci, 151 conformed and yielded a utility percentage of 87. Reciprocity and science had two incidents each; these received four tallies rather than two. Results of the analysis appear in Table XXIII.

TABLE XXIII

UTILITY OF GENERALIZATION 22

	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
Incidents of ce	115	111 (lance)	4 (ocean)	97
Incidents of ci	59	40 (society)	19 (judicial)	68
Totals	174	151	23	87

Utility of Generalization 23. When the letter c is followed by o or a, the sound of k is likely to be heard.

Co and ca occurred, in the vocabulary analyzed, a total of 274 times and in every case conformed. Co cases were more numerous and were found 162 times while 112 instances of ca were located. In such words as cocoa and cocoon multiple incidents were tallied. In Table XXIV is shown a summary of data related to Generalization 23. Utility was indicated as 100 per cent.

TABLE XXIV

UTILITY OF GENERALIZATION 23

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
274	274 (narcotic)	0	100

Utility of Generalization 24. The letter g often has a sound similar to that of j in jump when it precedes the letter i or e.

A search was made for all incidents of ge and gi. Of the 103 occurrences located, 78 were instances of ge; gi occurred 25 times. Ninety-six of the total occurrences were conformable to the generalization. This yielded a utility percentage of 93 per cent. A summary of the analysis appears in Table XXV.

TABLE XXV

UTILITY OF GENERALIZATION 24

	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
Incidents of ge	78	74 (village)	4 (geyser)	95
Incidents of gi	25	22 (regional)	3 (logging)	88
Totals	103	96	7	93

Utility of Generalization 25. When ght is seen in a word, gh is silent.

Only 15 ght combinations were located. Because each of the 15 conformed to the generalization, a 100 per cent utility rating is shown in Table XXVI.

TABLE XXVI

UTILITY OF GENERALIZATION 25

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
15	15 (watertight)	0	100

Utility of Generalization 26. When a word begins kn, the k is silent.

Four words contained kn as the initial element. Each of the four conformed and the generalization is shown with a utility percentage of 100 per cent in Table XXVII.

TABLE XXVII

UTILITY OF GENERALIZATION 26

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
4	4 (knobby)	0	100

Utility of Generalization 27. When a word begins with wr, the w is silent.

Three words were located that began with the combination wr. In each case, the w was silent and conformed to the generalization. In Table XXVIII a utility of 100 percent is reported for the generalization.

TABLE XXVIII

UTILITY OF GENERALIZATION 27

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
3	3 (wrought)	0	100

Utility of Generalization 28. When two of the same consonants are side by side, only one is heard.

Double consonants occurred in the vocabulary 318 times with only 7 exceptions. Among the exceptions were two compound words, midday and nighttime. The other five, access, depression, discussion, expression, and secession had two sounds for the double consonants; only the two compounds, nighttime and midday, repeated the sound of

the consonant itself. A utility percentage of 98 is shown together with examples in Table XXIX.

TABLE XXIX

UTILITY OF GENERALIZATION 28

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
318	311 (centennial)	7 (nighttime)	98

Utility of Generalization 29. When a word ends in ck, it has the same last sound as in look.

Eighteen words from the vocabulary ended in ck and each conformed to the generalization. A 100 per cent utility was computed and appears in Table XXX.

TABLE XXX

UTILITY OF GENERALIZATION 29

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
18	18 (limerick)	0	100

Utility of Generalization 30. In most two-syllable words, the first syllable is accented.

Almost one-half of the total vocabulary consisted of two-syllable words. Of the 1,058 two-syllable terms, 105 had accents, either primary

or secondary, on both parts. An additional 8 had equally-stressed syllables. Among these 8 were two hyphenated words; the other 6 were compounds. The generalization had a utility of 85 per cent in that 895 of the 1,058 occurrences conformed. Results appear in Table XXXI.

TABLE XXXI

UTILITY OF GENERALIZATION 30

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
1,058	895 (trawler)	163 (estate)	85

Utility of Generalization 31. If a, in, re, ex, de, or be is the first syllable in a word, it is usually unaccented.

Though a considerable number of incidents was found for the whole array of combinations, none had more than 47 incidents. Be occurred only once and that incident followed the generalization. De was found 19 times, ex 31 times, and re, in, and a 47, 45, and 25 times, respectively. De was relatively dependable with 95 per cent conformations but had one of the smallest number of incidents. In appeared least dependable with the lowest utility of the group, 60 per cent. Of the aggregate total for all six combinations, 131 of 168 incidents conformed. A 78 per cent overall utility is shown, together with a complete summary and examples, in Table XXXII.

TABLE XXXII

UTILITY OF GENERALIZATION 31

	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
Incidents of *a*	25	22 (achieve)	3 (atrium)	88
Incidents of *in*	45	27 (insane)	18 (indigo)	60
Incidents of *re*	47	40 (refine)	7 (regional)	85
Incidents of *ex*	31	23 (explore)	8 (exile)	74
Incidents of *de*	19	18 (demerit)	1 (demarcation)	95
Incidents of *be*	1	1 (belonging)	0	100
Totals	168	131	37	78

Utility of Generalization 32. In most two-syllable words that end in a consonant followed by *y*, the first syllable is accented and the last is unaccented.

Only two exceptions appeared among the 53 incidents to which the generalization pertained. Examples and a utility percentage of 96 per cent are shown in Table XXXIII.

TABLE XXXIII

UTILITY OF GENERALIZATION 32

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
53	51 (foundry)	2 (supply)	96

Utility of Generalization 33. One vowel letter in an accented syllable has its short sound.

Words of more than two syllables were isolated by hand from the complete listing because the computer program was not designed to deal with secondary accents. Because the computer did not distinguish w and y as vowels, such cases of usage were located by scrutinizing the total vocabulary. Words such as intercontinental had multiple incidents to which the generalization was applicable; these received multiple tallies. Chowder, buyer, dyeing, and similar words were considered inapplicable because the accented syllable was considered as containing double vowels. The generalization applied to 1,872 incidents. Of these 1,181 conformed and 691 were exceptions. The percentage of utility, computed at 63 per cent, is shown in Table XXXIV.

TABLE XXXIV

UTILITY OF GENERALIZATION 33

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
1,872	1,181 (ability)	691 (burial)	63

Utility of Generalization 34. When y or ey is seen in the last syllable that is not accented, the long sound of e is heard.

Because the computer program provided no way of identifying the last syllable, this analysis was completed manually. Words to which the generalization applied numbered 204 with 196 conformations and a percentage of utility of 96. These results differed drastically from the percentages of zero, zero and one found by Bailey,[4] Clymer,[5] and Emans,[6] respectively. The difference was attributed to their common usage of various editions of the Webster's New Collegiate Dictionary. According to Bailey the applicable sound denoted is that of short i. Emans suggested modification of the generalization to reflect the short i presence, thereby making possible in his study a utility of 96 per cent. Results appear in Table XXXV.

TABLE XXXV

UTILITY OF GENERALIZATION 34

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
204	196 (abbey)	8 (survey)	96

[4]Mildred H. Bailey, "An Analytical Study of the Utility of Selected Phonic Generalizations for Children in Grades One Through Six," (unpublished Doctoral dissertation, The University of Mississippi, University, Mississippi, 1965), 69.

[5]Theodore Clymer, "The Utility of Phonic Generalizations in the Primary Grades," The Reading Teacher, 16 (January, 1963), 256.

[6]Robert Emans, "The Usefulness of Phonic Generalizations Above the Primary Grades," The Reading Teacher, 20 (February, 1967), 42

Utility of Generalization 35. When ture is the final syllable in a word, it is unaccented.

Each of the 16 incidents of final ture was unaccented. The generalization was assigned a percentage of utility of 100 per cent for the vocabulary analyzed. Results are shown in Table XXXVI.

TABLE XXXVI

UTILITY OF GENERALIZATION 35

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
16	16 (indenture)	0	100

Utility of Generalization 36. When tion is the final syllable in a word, it is unaccented.

Tion occurred as the final syllable in 73 words of the vocabulary studied. In all but four instances, the word contained more than two syllables. Because every incident conformed to the generalization, the percentage of utility was placed at 100 per cent. Results appear in Table XXXVII.

TABLE XXXVII

UTILITY OF GENERALIZATION 36

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
73	73 (declaration)	0	100

Utility of Generalization 37. In many two- and three-syllable words, the final e lengthens the vowel in the last syllable.

A 34 per cent utility was determined for the generalization when only 110 of the 323 applicable incidents conformed. The generalization was interpreted to rule such words as beetle, table, and noble as exceptions because final e as the only vowel in the last syllable was, in fact, not long in sound. Disease was considered an exception because ea made the long e rather than the long a sound. Thus the generalization was also interpreted as applicable to the vowel immediately preceding final e when more than one such vowel appeared in the last syllable. By the same reasoning, earthquake was tallied as a conformation. Results are shown in Table XXXVIII.

TABLE XXXVIII

UTILITY OF GENERALIZATION 37

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
323	110 (palisade)	213 (precipice)	34

Utility of Generalization 38. If the first vowel sound in a word is followed by two consonants, the first syllable usually ends with the first of the two consonants.

Because the computer was designed to consistently program only a, e, i, o, and u as vowels, words containing w and y were studied separately. Lists evolved for use with Generalizations 15 and 17 were used. No applicable incidents were located among the w word listing,

but such words as cypress and python (with y as first vowel) were applications containing vowel y. By treating w and y as consonants for Generalization 38, the computer isolated such words as chowder and geyser. These were eliminated from consideration. In these types w and y were considered vowels. It is noted that words containing three or more consonants after the initial vowel were inapplicable. These included words like griddle and asphalt.

It is shown in Table XXXIX that 628 of 741 applicable incidents conformed and the generalization was assigned a utility of 85 per cent.

TABLE XXXIX

UTILITY OF GENERALIZATION 38

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
741	628 (craggy)	113 (microscope)	85

Utility of Generalization 39. If the first vowel sound in a word is followed by a single consonant, that consonant usually begins the second syllable.

Lists evolved for Generalizations 15 and 17 were again utilized to isolate applicable incidents in which w or y was used as the initial vowel. In no instance did a w act as the first vowel, but such words as nylon, stylus, and physical furnished instances of y used in an applicable manner. Because the computer program was not capable of distinguishing w and y as vowels, initial listings of words such as chowder, vowel, and bayou were analyzed then eliminated. A total of

730 incidents applied to the generalization; of these 385 conformed. In Table XL are indicated examples and a utility of 53 per cent for the generalization.

TABLE XL

UTILITY OF GENERALIZATION 39

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
730	385 (zodiac)	345 (federation)	53

Utility of Generalization 40. If the last syllable of a word ends in le, the consonant preceding the le usually begins the last syllable.

The generalization was interpreted to mean the le and the consonant immediately preceding it. Fifty-eight words were found to contain applicable incidents of consonant plus le and all but one conformed. A utility percentage of 98 per cent was determined. Results appear in Table XLI.

TABLE XLI

UTILITY OF GENERALIZATION 40

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
58	57 (trestle)	1 (chicle)	98

Utility of Generalization 41. When the first vowel element in a word is followed by th, ch, or sh, these symbols are not broken when the word is divided into syllables and may go with either the first or second syllable.

The computer program was designed to isolate all multisyllabic words containing one or more of the following: ath, eth, ith, oth, uth, ach, ech, ich, och, uch, ash, esh, ish, osh, and ush. Words containing the vowel y or vowel w plus ch, th, or sh were identified by visual inspection. Only the word python was found applicable. From the computer listings all other combinations occurred at least once except esh, och, osh, uth, and ush. Ath occurred on six occasions. In no case was an exception to the generalization found among the 32 incidents located. A utility of 100 per cent is reported in Table XLII.

TABLE XLII

UTILITY OF GENERALIZATION 41

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
32	32 (fisherman)	0	100

Utility of Generalization 42. In a word of more than one syllable, the letter y usually goes with the preceding vowel to form a syllable.

A utility of 30 per cent was assigned to the generalization because 111 of the 159 incidents were exceptions; 48 incidents conformed. By contrast, in 85 of the 111 exceptions the y initiated the syllable

in which it was located. Results appear in Table XLIII.

TABLE XLIII

UTILITY OF GENERALIZATION 42

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
159	48 (poverty)	111 (diversify)	30

Utility of Generalization 43. When a word has only one vowel letter, the vowel sound is likely to be short.

The computer program made no distinction regarding words in which y was the single vowel. Words erroneously listed as single vowel words such as bulky and lyre were eliminated. Of the 275 applicable words remaining, 185 conformed to the stated generalization. A 67 per cent utility is shown in Table XLIV.

TABLE XLIV

UTILITY OF GENERALIZATION 43

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
275	185 (hemp)	90 (palm)	67

Utility of Generalization 44. When there is one e in a word that ends in a consonant, the e usually has a short sound.

Bailey[7] raised a pertinent question regarding interpretation of Generalization 44. She concluded that it pertains to one-syllable words and completed her analysis on that basis. This investigator initially interpreted the generalization literally, applied it first to all words in the vocabulary and then for comparison purposes applied it to monosyllables.

Among one-syllable words, 87 incidents were located. Of these 44 conformed and 43 were exceptions. There were 38 vowel digraphs in the list of exceptions but only 23 of these conformed to the vowel digraph generalization (see Generalization 1). The 44 conformations were the basis for computing a utility of 51 per cent as shown in Table XLV.

A much lower percentage of utility applied to the generalization when used in the list of multisyllabic words. Applicable incidents totaled 650 and 144 of these conformed for a utility of 22 per cent. In Table XLV, the results of this generalization are reported.

A third percentage of utility was computed on the grand total of applicable incidents among both monosyllables and multisyllabic words. Shown in Table XLV is the overall utility of 26 per cent.

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[7]Mildred H. Bailey, "An Analytical Study of the Utility of Selected Phonic Generalizations for Children in Grades One Through Six," (unpublished Doctoral dissertation, The University of Mississippi, University, Mississippi, 1965), p. 76.

TABLE XLV

UTILITY OF GENERALIZATION 44

	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
Incidents among one-syllable words	87	44 (thresh)	43 (serf)	51
Incidents among multi-syllabic words	650	144 (prospector)	506 (geographic)	22
Totals	737	188	549	26

Utility of Generalization 45. When the last syllable is the sound r, it is unaccented.

The generalization required interpretation because it does not specify whether the last syllable is limited to the sound r or what position r must hold. It was decided that an incident was applicable if r appeared in the final syllable as respelled phonetically in the dictionary used as the authority.

Certain words had an r in the last syllable when spelled but had no r sound in the phonetic respelling. These, including such words as barrel, barracks, and burro, were eliminated from consideration.

These conforming to the generalization numbered 358 of a 474 total. The remaining 116 were exceptions. The resulting utility of 76 per cent appears in Table XLVI.

TABLE XLVI

UTILITY OF GENERALIZATION 45

Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
474	358 (copper)	116 (corduroy)	76

Summary of the Utility of Forty-five Phonics Generalizations. In Table XLVII is indicated a summary of the findings related to all forty-five of the phonics generalizations. Each of the principles is stated and the number of conformations and exceptions shown. A percentage of utility is presented for each and for sub-categories within the broader Generalizations numbered 2, 6, 18, 22, 24, 31, and 44.

TABLE XLVII

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
1. When there are two vowels side by side, the long sound of the first vowel is heard, and the second vowel is usually silent.	897	241 (peace)	656 (pier)	27
2. When a vowel is in the middle of a one-syllable word, the vowel is short.				
middle letter	99	79 (cod)	20 (chart)	80
one of the middle two letters in a word of four letters	133	92 (bran)	41 (boll)	69
one vowel within a word of more than four letters	86	56 (hatch)	30 (wharf)	65
Totals	318	227	91	71
3. If the only vowel letter is at the end of a word, the letter usually stands for a long sound.	2	1 (dry)	1 (two)	50

TABLE XLVII (continued)

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
4. When there are two vowels, one of which is final e, the first vowel is long, and the e is silent.	175	101 (acre)	74 (chicle)	58
5. The r gives the preceding vowel a sound that is neither long nor short.	885	831 (picture)	54 (inherit)	94
6. The first vowel is usually long and the second silent in the digraphs ai, ea, oa, and ui.				
ai	64	37 (drainage)	27 (air)	58
ea	117	58 (bleak)	59 (cereal)	50
oa	39	26 (ferryboat)	13 (abroad)	67
ui	20	0	20 (cruise)	0
Totals	240	121	119	50

TABLE XLVII (continued)

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
7. In the phonogram ie, the i is silent, and the e has a long sound.	43	14 (shield)	29 (hosiery)	33
8. Words having double e usually have the long e sound.	52	47 (creek)	5 (pioneer)	90
9. When words end with silent e, the preceding a or i is long.	377	179 (strike)	198 (average)	47
10. In ay, the y is silent and gives a its long sound.	12	10 (rayon)	2 (bayou)	83
11. When the letter i is followed by the letters gh, the i usually stands for its long sound, and the gh is silent.	14	9 (bullfight)	5 (straight)	64
12. When a follows w in a word, it usually has the sound a as in was.	45	8 (wassail)	37 (stowaway)	18

TABLE XLVII (continued)

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
13. When e is followed by w, the vowel sound is the same as represented by oo.	16	7 (steward)	9 (curfew)	44
14. The two letters ow make the long o sound.	49	27 (windrow)	22 (cauliflower)	55
15. W is sometimes a vowel and follows the vowel digraph rule.	69	27 (winnow)	42 (sinew)	39
16. When y is the final letter in a word, it usually has a vowel sound.	219	193 (tannery)	26 (piney)	88
17. When y is used as a vowel in words, it sometimes has the sound of long i.	279	35 (scythe)	244 (creamery)	13
18. The letter a has the same sound (ô) when followed by l, w, u.				
Incidents of al	191	15 (alderman)	176 (coal)	8

TABLE XLVII (continued)

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
Incidents of aw	12	9 (macaw)	3 (seaweed)	75
Incidents of au	19	14 (bauxite)	5 (authority)	74
Totals	222	38	184	17
19. When a is followed by r and final e, we expect to hear the sound heard in care.	8	8 (warfare)	0	100
20. When c and h are next to each other, they make only one sound.	105	105 (monarch)	0	100
21. Ch is usually pronounced as it is in kitchen, catch, and chair, not like sh.	105	74 (vetch)	31 (scholar)	70
22. When c is followed by e or i, the sound of s is likely to be heard.				
Incidents of ce	115	111 (lance)	4 (ocean)	97

TABLE XLVII (continued)

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
Incidents of ci	59	40 (society)	19 (judicial)	68
Total incidents of ce and ci	174	151	23	87
23. When the letter c is followed by o or a, the sound of k is likely to be heard.	274	274 (narcotic)	0	100
24. The letter g often has a sound similar to that of j in jump when it precedes the letter i or e.				
Incidents of ge	78	74 (village)	4 (geyser)	95
Incidents of gi	25	22 (regional)	3 (logging)	88
Total incidents ge and gi	103	96	7	93
25. When ght is seen in a word, gh is silent.	15	15 (watertight)	0	100

TABLE XLVII (continued)

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
26. When a word begins kn, the k is silent.	4	4 (knobby)	0	100
27. When a word begins with wr, the w is silent.	3	3 (wrought)	0	100
28. When two of the same consonants are side by side, only one is heard.	318	311 (centennial)	7 (nighttime)	98
29. When a word ends in ck, it has the same last sound as in look.	18	18 (limerick)	0	100
30. In most two-syllable words, the first syllable is accented.	1,058	895 (trawler)	163 (severe)	85
31. If a, in, re, ex, de, or be is the first syllable in a word, it is usually unaccented.				
Incidents of a	25	22 (achieve)	3 (atrium)	88

TABLE XLVII (Continued)

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
Incidents of in	45	27 (insane)	18 (indigo)	60
Incidents of re	47	40 (refine)	7 (regional)	85
Incidents of ex	31	23 (explore)	8 (exile)	74
Incidents of de	19	18 (demerit)	1 (demarcation)	95
Incidents of be	1	1 (belonging)	0	100
Totals	168	131	37	78
32. In most two-syllable words that end in a consonant followed by y, the first syllable is accented, and the last is unaccented.	53	51 (foundry)	2 (supply)	96
33. One vowel letter in an accented syllable has its short sound.	1,872	1,181 (ability)	691 (burial)	63

TABLE XLVII (continued)

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
34. When y or ey is seen in the last syllable that is not accented, the long sound of e is heard.	204	196 (abbey)	8 (survey)	96
35. When ture is the final syllable in a word, it is unaccented.	16	16 (indenture)	0	100
36. When tion is the final syllable in a word, it is unaccented.	73	73 (declaration)	0	100
37. In many two- and three-syllable words, the final e lengthens the vowel in the last syllable.	323	110 (palisade)	213 (precipice)	34
38. If the first vowel sound in a word is followed by two consonants, the first syllable usually ends with the first of the two consonants.	741	628 (craggy)	113 (microscope)	85
39. If the first vowel sound in a word is followed by a single consonant, that consonant usually begins the second syllable.	730	385 (zodiac)	345 (federation)	53

TABLE XLVII (continued)

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
40. If the last syllable of a word ends in le, the consonant preceding the le usually begins the last syllable.	58	57 (trestle)	1 (chicle)	98
41. When the first vowel element in a word is followed by th, ch, or sh, these symbols are not broken when the word is divided into syllables and may go with either the first or second syllable.	32	32 (fisherman)	0	100
42. In a word of more than one syllable, the letter v usually goes with the preceding vowel to form a syllable.	159	48 (poverty)	111 (diversify)	30
43. When a word has only one vowel letter, the vowel sound is likely to be short.	275	185 (hemp)	90 (palm)	67
44. When there is one e in a word that ends in a consonant, the e usually has a short sound.				

TABLE XLVII (continued)

UTILITY AND APPLICABILITY OF FORTY-FIVE PHONIC GENERALIZATIONS

Generalizations	Number of Applicable Incidents	Number of Conforming Incidents	Number of Exceptions	Percentage of Utility
Incidents among one-syllable words	87	44 (thresh)	43 (serf)	51
Incidents among multisyllabic words	650	144 (prospector)	506 (geographic)	22
Totals	737	188	549	26
45. When the last syllable is the sound r, it is unaccented.	474	358 (copper)	116 (corduroy)	76

Summary. Data developed from analyzing and comparing a social studies vocabulary with 45 phonic generalizations were presented in this chapter. For each generalization the total number of applicable incidents was listed. Conformations and exceptions were numbered and the results presented in tables. A percentage of utility was computed for each generalization and shown together with examples of conformations and exceptions. In Table XLVII, data for all of the generalizations are presented in concise form.

CHAPTER V

SUMMARY AND CONCLUSIONS

I. SUMMARY

The present investigation reported the percentages of utility and an analysis of applicability of forty-five phonic generalizations in a vocabulary of 2,613 words developed from fourth, fifth, and sixth grade history and geography textbooks. The phonic generalizations were initially stated by Clymer[1] and subsequently used in studies by Bailey[2] and Emans.[3] A comparison was made using the results of this investigation and results of the related studies.

Application of Clymer's criteria to the results of the study. Clymer[4] developed two criteria for use in evaluating the applicability and percentages of utility of each of the forty-five phonic generalizations which he stated. The first criterion stated that each generalization must apply to a minimum of twenty words in the 2,600 word-

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[1]Theodore Clymer, "The Utility of Phonic Generalizations in the Primary Grades," The Reading Teacher, 16 (January, 1963), 252-258.

[2]Mildred Bailey, "The Utility of Phonic Generalizations in Grades One Through Six," The Reading Teacher, 20 (February, 1967), 415-417.

[3]Robert Emans, "The Usefulness of Phonic Generalizations Above the Primary Grades," The Reading Teacher, 20 (February, 1967), 419-425.

[4]Ibid., p. 420.

vocabulary which he analyzed. The second criterion required a dependability or utility of 75 per cent.

The data compiled in the present study were analyzed by applying these criteria. Seventeen generalizations satisfied both criteria used by Clymer. These were Generalizations 5, 8, 16, 20, 22, 23, 24, 28, 30, 31, 32, 34, 36, 38, 40, 41, and 45. Results appear in Table XLVII.

Eighteen generalizations were applicable to the criterion of twenty or more words but failed to satisfy the 75 per cent criterion of utility. These included Generalizations 1, 2, 4, 6, 7, 9, 12, 14, 15, 17, 18, 21, 33, 37, 39, 42, 43, and 44. Results appear in Table XLVII.

Seven generalizations satisfied the criterion of a utility of 75 per cent or more, but had fewer than twenty applications in the vocabulary analyzed. The seven were Generalizations 10, 19, 25, 26, 27, 29, and 35. In Table XLVII, these results are reported.

Certain generalizations satisfied neither of the two criteria. Each of three had fewer than twenty applications and also failed to reflect a utility of 75 per cent or more. In this category were Generalizations 3, 11, and 13. Data are summarized in Table XLVII.

Comparison of results with those of previous studies. A comparison with previous studies revealed that eighteen generalizations satisfied the criteria established by Clymer in his study.[5] In Emans'[6] inquiry, only sixteen generalizations satisfied the criteria for an intermediate level vocabulary, but in Bailey's investigation which

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[5]Clymer, loc. cit.

[6]Emans, op. cit., p. 424.

utilized a vocabulary for grades one through six, twenty-four generalizations met the conditions of the two criteria.[7] In Table XLVIII, a complete listing of the utility percentages is presented.

Thirteen generalizations satisfied the two criteria both in the present study and in each of the investigations reported by Clymer, Bailey, and Emans. These were Generalizations 5, 8, 16, 20, 22, 23, 28, 30, 31, 32, 40, 41, and 45. Results appear in Table XLVIII.

Certain generalizations shown in Table XLVIII satisfied both criteria in certain studies but not in others. Generalizations 3, 19, and 37 satisfied the requirements in Bailey's study but failed to do so in the other investigations used in this comparison. Generalizations 10, 21, 25, 29, and 44 were acceptable in terms of the criteria in the studies of Clymer and Bailey but not in that of Emans or in the present study. Generalizations 24, 36, and 38 satisfied the criteria in all the studies reported except that of Clymer. Only in the present study did Generalization 34 satisfy both the 75 per cent utility requirement and have twenty or more applications.

Generalizations with 100 per cent utility. Each of the generalizations that had a 100 per cent utility was noted. In the present study, ten generalizations merited such a rating. Eight of these ten also received 100 per cent ratings in the studies reported by Clymer, Bailey and Emans. The 100 per cent-generalizations were 19, 20, 23, 25, 26, 27, 29, 35, 36, and 41. Emans also computed a 100 per cent utility for

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[7]Bailey, op. cit., pp. 415-417.

Generalization 19, but Clymer and Bailey reported it at 90 and 96 per cent, respectively. For Generalization 35, only Bailey reported less than 100 per cent utility. She reported 95 per cent, but a single exception among twenty-two applications accounted for this percentage. These data are presented in Table XLVIII.

Generalizations 26 and 27 failed to apply in a minimum of twenty instances but had utilities of 100 per cent in this study. The remaining eight that had 100 per cent utility figures had relatively few applications. Among these only Generalization 20 and 23 exceeded seventy-three applications. In Table XLVII are shown both utility percentages and the number of applications.

II. CONCLUSIONS

Data reported in the present study suggest that:

1. Evidence from four studies indicate that fewer than one-half of the forty-five generalizations consistently satisfied both the criteria of 75 per cent utility and applicability in twenty or more words when tested in the vocabularies specified.
2. A larger number of the forty-five phonic generalizations satisfied the 75 per cent criterion of utility and are applicable to twenty or more words when used in larger vocabularies drawn from an increased number of grade levels.
3. Evidence from three earlier studies and this investigation indicated that the generalizations listed below are dependable. In each of the four studies, these generalizations

TABLE XLVIII

UTILITY OF FORTY-FIVE PHONIC GENERALIZATIONS[a]

Generalizations	Percentage of Utility			
	Clymer[b] (2,600 words primary-grade vocabulary)	Bailey[c] (5,773 words first through sixth-grade vocabulary)	Emans[d] (1,944 words beyond third-grade vocabulary	Parker[e] (2,613 words history and geography vocabulary)
1. When there are two vowels side by side, the long sound of the first vowel is heard, and the second vowel is usually silent.	45	34	18	27
2. When a vowel is in the middle of a one-syllable word, the vowel is short.	62	71	73	68
middle letter	69	78	81	80
one of the middle two letters in a word of four letters	59	68	71	69
one vowel within a word of more than four letters	46	62	42	65
3. If the only vowel letter is at the end of a word, the letter usually stands for a long sound.	74	76	33	50

TABLE XLVIII (continued)

UTILITY OF FORTY-FIVE PHONIC GENERALIZATIONS[a]

Generalizations	Percentage of Utility			
	Clymer[b] (2,600 words primary-grade vocabulary)	Bailey[c] (5,773 words first through sixth-grade vocabulary)	Emans[d] (1,944 words beyond third-grade vocabulary)	Parker[e] (2,613 words history and geography vocabulary)
4. When there are two vowels, one of which is final e, the first vowel is long, and the e is silent.	63	57	63	58
5. The r gives the preceding vowel a sound that is neither long nor short.	78	86	82	94
6. The first vowel is usually long and the second silent in the digraphs ai, ea, oa, and ui.	66	60	58	50
ai	64	72	83	58
ea	66	55	62	50
oa	97	95	86	67
ui	6	10	0	0
7. In the phonogram ie, the i is silent, and the e has a long sound.	17	31	23	33

TABLE XLVIII (continued)

UTILITY OF FORTY-FIVE PHONIC GENERALIZATIONS[a]

Generalizations	Percentage of Utility			
	Clymer[b] (2,600 words primary-grade vocabulary)	Bailey[c] (5,773 words first through sixth-grade vocabulary)	Emans[d] (1,944 words beyond third-grade vocabulary)	Parker[e] (2,613 words history and geography vocabulary)
8. Words having double e usually have the long e sound.	98	87	100	90
9. When words end with silent e, the preceding a or i is long.	60	50	48	47
10. In ay, the y is silent and gives a its long sound.	78	88	100	83
11. When the letter i is followed by the letters gh, the i usually stands for its long sound, and the gh is silent.	71	71	100	64
12. When a follows w in a word, it usually has the sound a as in was.	32	22	28	18
13. When e is followed by w, the vowel sound is the same as represented by oo.	35	40	14	44
14. The two letters ow make the long o sound.	59	55	50	55

TABLE XLVIII (continued)

UTILITY OF FORTY-FIVE PHONIC GENERALIZATIONS[a]

Generalizations	Percentage of Utility			
	Clymer[b] (2,600 words primary-grade vocabulary)	Bailey[c] (5,773 words first through sixth-grade vocabulary)	Emans[d] (1,944 words beyond third-grade vocabulary)	Parker[e] (2,613 words history and geography vocabulary)
15. W is sometimes a vowel and follows the vowel digraph rule.	40	33	31	39
16. When y is the final letter in a word, it ususally has a vowel sound.	84	89	98	88
17. When y is used as a vowel in words, it sometimes has the sound of long i.	15	11	4	13
18. The letter a has the same sound (ô) when followed by l, w, and u.	48	34	24	17
19. When a is followed by r and final e, we expect to hear the sound heard in care.	90	96	100	100
20. When c and h are next to each other, they make only one sound.	100	100	100	100

TABLE XLVIII (continued)

UTILITY OF FORTY-FIVE PHONIC GENERALIZATIONS[a]

Generalizations	Percentage of Utility			
	Clymer[b] (2,600 words primary-grade vocabulary)	Bailey[c] (5,773 words first through sixth-grade vocabulary)	Emans[d] (1,944 words beyond third-grade vocabulary)	Parker[e] (2,613 words history and geography vocabulary)
21. Ch is usually pronounced as it is in kitchen, catch, and chair, not like sh.	95	87	67	70
22. When c is followed by e or i, the sound of s is likely to be heard.	96	92	90	87
23. When the letter c is followed by o or a, the sound of k is likely to be heard.	100	100	100	100
24. The letter g often has a sound similar to that of j in jump when it precedes the letter i or e.	64	78	80	93
25. When ght is seen in a word, gh is silent.	100	100	100	100
26. When a word begins kn, the k is silent.	100	100	100	100

TABLE XLVIII (continued)

UTILITY OF FORTY-FIVE PHONIC GENERALIZATIONS[a]

Generalizations	Percentage of Utility			
	Clymer[b] (2,600 words primary-grade vocabulary)	Bailey[c] (5,773 words first through sixth-grade vocabulary)	Emans[d] (1,944 words beyond third-grade vocabulary)	Parker[e] (2,613 words history and geography vocabulary)
27. When a word begins with wr, the w is silent.	100	100	100	100
28. When two of the same consonants are side by side, only one is heard.	99	98	91	98
29. When a word ends in ck, it has the same last sound as in look.	100	100	100	100
30. In most two-syllable words, the first syllable is accented.	85	81	75	85
31. If a, in, re, ex, de, or be is the first syllable in a word, it is usually unaccented.	87	84	83	78

TABLE XLVIII (continued)

UTILITY OF FORTY-FIVE PHONIC GENERALIZATIONS[a]

Generalizations	Percentage of Utility			
	Clymer[b] (2,600 words primary-grade vocabulary)	Bailey[c] (5,773 words first through sixth-grade vocabulary)	Emans[d] (1,944 words beyond third-grade vocabulary)	Parker[e] (2,613 words history and geography vocabulary)
32. In most two-syllable words that end in a consonant followed by y, the first syllable is accented, and the last is unaccented.	96	97	100	96
33. One vowel letter in an accented syllable has its short sound.	61	65	64	63
34. When y or ey is seen in the last syllable that is not accented, the long sound of e is heard.	0	0	1	96
35. When ture is the final syllable in a word, it is unaccented.	100	95	100	100
36. When tion is the final syllable in a word, it is unaccented.	100	100	100	100
37. In many two- and three-syllable words, the final e lengthens the vowel in the last syllable.	46	46	42	34

TABLE XLVIII (continued)

UTILITY OF FORTY-FIVE PHONIC GENERALIZATIONS[a]

Generalizations	Percentage of Utility			
	Clymer[b] (2,600 words primary-grade vocabulary)	Bailey[c] (5,773 words first through sixth-grade vocabulary)	Emans[d] (1,944 words beyond third-grade vocabulary)	Parker[e] (2,613 words history and geography vocabulary)
38. If the first vowel sound in a word is followed by two consonants, the first syllable usually ends with the first of the two consonants.	72	78	80	85
39. If the first vowel sound in a word is followed by a single consonant, that consonant usually begins the second syllable.	44	50	47	53
40. If the last syllable of a word ends in le, the consonant preceding the le usually begins the last syllable.	97	93	78	98
41. When the first vowel element in a word is followed by th, ch, or sh, these symbols are not broken when the word is divided into syllables and may go with either the first or second syllable.	100	100	100	100

TABLE XLVIII (continued)

UTILITY OF FORTY-FIVE PHONIC GENERALIZATIONS[a]

Generalizations	Percentage of Utility			
	Clymer[b] (2,600 words primary-grade vocabulary)	Bailey[c] (5,773 words first through sixth-grade vocabulary)	Emans[d] (1,944 words beyond third-grade vocabulary)	Parker[e] (2,613 words history and geography vocabulary)
42. In a word of more than one syllable, the letter v usually goes with the preceding vowel to form a syllable.	73	65	40	30
43. When a word has only one vowel letter, the vowel sound is likely to be short.	57	69	70	67
44. When there is one e in a word that ends in a consonant, the e usually has a short sound.	76	92	83	51[f]
45. When the last syllable is the sound r, it is unaccented.	95	79	96	76

TABLE XLVIII (continued)

UTILITY OF FORTY-FIVE PHONIC GENERALIZATIONS[a]

Generalizations	Percentage of Utility			
	Clymer[b] (2,600 words primary-grade vocabulary)	Bailey[c] (5,773 words first through sixth-grade vocabulary)	Emans[d] (1,944 words beyond third-grade vocabulary)	Parker[e] (2,613 words history and geography vocabulary)

[a]This table is adapted from one distributed by Mildred H. Bailey to accompany an address presented in the Conference on Reading, Louisiana State University, Baton Rouge, July 24, 1967.

[b]Clymer, Theodore, "The Utility of Phonic Generalizations in the Primary Grades," The Reading Teacher, 16 (January, 1963), pp. 252-58.

[c]Bailey, Mildred Hart, "The Utility of Phonic Generalizations in Grades One Through Six," The Reading Teacher, 20 (February, 1967), pp. 413-418.

[d]Emans, Robert, "The Usefulness of Phonic Generalizations Above the Primary Grades," The Reading Teacher, 20 (February, 1967), pp. 419-25.

[e]Percentages of utility from the present study as shown in Table XLVII, pages 67-77, in this study.

[f]This percentage is utilized to effect a comparison with previous studies on the basis of applicable monosyllables.

were assigned 100 per cent utilities. The generalizations are numbered here as Clymer designated them but are rewritten in words that seem more meaningful to this investigator.

Generalization 20. The word element ch has one sound.

Generalization 23. In the word elements co and ca, the c has the k sound.

Generalization 25. In the word element ght, the gh is silent.

Generalization 26. In words beginning kn, the k is silent.

Generalization 27. In words beginning wr, the w is silent.

Generalization 29. Ck, as the last element in a word, has the sound of k.

Generalization 36. Tion as a final syllable is unaccented.

Generalization 41. Any instance of th, ch, or sh is not separated into two syllables when it follows the initial vowel in a word.

4. Percentages of utility computed for a particular phonic generalization may vary greatly, when different dictionaries are used as the pronunciation authority, as indicated by the reports of four studies relating to Generalization 34.

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APPENDIX

SOCIAL STUDIES TEXTBOOKS ADOPTED BY THE LOUISIANA STATE BOARD OF EDUCATION UTILIZED IN THIS INVESTIGATION

GEOGRAPHY

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VITA

Jesse Joe Parker was born on July 30, 1930, at Trout, Louisiana, in LaSalle Parish, the son of William Kelly Parker and Lizzie Hailey Parker.

He was educated in the schools of Louisiana. After graduating from Buckeye, Louisiana, High School, he attended Northwestern State College of Natchitoches, Louisiana, where he received a Bachelor of Arts degree in 1950 and a Master of Education degree in 1958.

He taught in the Minden Junior High School from 1950 through 1953 and again from 1955 through 1958. In the interim, 1953 to 1955, he was employed by the Louisiana Division of Employment Security and by the Louisiana State Department of Welfare. From 1958 to 1961, he was supervising teacher in the laboratory school at Northwestern State College. In 1961, he was named principal of Leesville, Louisiana, High School, a position he held until 1966. In 1966 he was appointed an Associate in the Department of Extramural Teaching at Louisiana State University, the position in which he is presently employed.

He served in the Louisiana National Guard from 1952 to 1961, at which time he was honorably discharged with the rank of First-Lieutenant.

He is married to Nelda Margrette Davis Parker who teaches at Bernard Terrace in Baton Rouge, Louisiana. They are the parents of four, Barry Dahl, Jonathan Alan, Lance Gregory (deceased), and Jo-Nell. The family resides in Baton Rouge.

EXAMINATION AND THESIS REPORT

Candidate: Jesse Joe Parker

Major Field: Education

Title of Thesis: The Utility of Phonic Generalizations in Their Application to the History and Geography Vocabularies in Certain Specified Textbooks Adopted for Grades Four, Five, and Six

Approved:

J B Gremillion
Major Professor and Chairman

Max Goodrich
Dean of the Graduate School

EXAMINING COMMITTEE:

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Date of Examination:

April 29, 1968